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ABSTRACT

This document consists of abstracts of research and development activities of 29 studies completed in Pennsylvania during the period from January 1 to December 31, 1982. Included in the collection are abstracts of 21 masters theses and eight doctoral theses. Various topics pertaining to agricultural education are covered, including the effectiveness of task instruction sheets, the influence of selected career information material on the career interest of secondary students, professional competencies needed by cooperative extension agents, the use of microcomputer-assisted instruction in teaching farm business management, the influence of wildlife contest participation on student achievement, utilization of life cycle information in making decisions concerning the control of Colorado potato beetles, agricultural education preservice instruction for teaching handicapped students, rural education in Venezuela, the implications of selected supervisory techniques for the success of beginning teachers in agriculture, the development and evaluation of various instructional materials, and guidelines for constructing greenhouses for Pennsylvania's vocational program. Each abstract includes the project's title, pertinent publication data, the purpose of the study, methods used in the study, and major study findings. (MN)

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PENNSYLVANIA'S 1982 ABSTRACTS OF RESEARCH IN AGRICULTURAL EDUCATION

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PREFACE

This document includes abstracts of research and development activities of 29 studies completed during the period January 1 to December 31, 1982. Twenty-one of the completed studies represent masters theses and eight represent doctoral theses. The abstracts are arranged alphabetically by author. The abstracts are written in the format of the series titled Summaries of Research and Development Activities in Agricultural Education assembled annually by the Research Committee, Agricultural Education Division, American Vocational Association, and published on microfiche in the ERIC system.

Appreciation is extended to the Research Committee and faculty in the Department of Agricultural and Extension Education for their assistance in collecting the necessary information. Special appreciation is extended to Joanne Morrison for typing the manuscript.

Ed Yoder

ABSTRACTS OF STUDIES

AJALA, Adebayo. "The Effects of Task Instruction Sheets on Learners Studying Poultry and Egg Production for Adaptation and Use in Developing Countries." Doctor of Philosophy Dissertation, 1981, The Pennsylvania State University, University Park.

Purpose. The study was undertaken to investigate the effects of using task instruction sheets with vocational agriculture students studying poultry and egg production competencies in Pennsylvania and to develop task instruction sheets with implications for developing countries.

Method. The posttest-only control group experimental design was utilized. Four student teachers from the Department of Agricultural Education, The Pennsylvania State University, taught the poultry and egg unit. A total of 54 students from four participating school districts participated in the study. Two evaluators scored the performance of the learners.

Findings. Findings indicated that: (1) There were significant differences between learners taught by use of task sheets and learners taught by traditional methods for tasks 2, 3, 4, and 6. No significant differences were found for tasks 1 and 5. (2) The male learners did not score significantly higher than the female learners on all six tasks. (3) Except for task 1, the 14- to 15-year olds significantly outscored the 16- to 17-year olds. (4) There were significant differences among the educational levels. Generally, the tenth graders scored significantly higher than both ninth and eleventh graders. (5) Levels of experience did not produce any significant difference. (6) No disordinal interaction was found between the treatment and the sex, age, education, and experience variables. (7) There was no significant relationship between the number of chickens (layers) on the learner's farm/home and his/her task performance. (8) Teachers and specialists who evaluated the task sheets gave them high ratings in content, format, and utility.

BAGGETT, Connie D. "The Influence of Selected Career Information Material on Career Interest of Secondary Students." Doctor of Philosophy Dissertation, 1982, The Pennsylvania State University, University Park.

Purpose. The purpose of this study was to examine the influence of selected agricultural career information on the career interest of agricultural students.

Method. Students of randomly selected teachers comprised three experimental groups. The first group consisted of agricultural exploration students who received the treatment. The second group consisted of non-agricultural students who received the treatment. The third group were agricultural students who experienced regular classroom instructions. All students in the treatment group completed a pretest prior to the treatment and a posttest after the treatment. The experimental treatment involved having students view the filmstrip series and listen to narrated cassettes titled A New Look At Careers in Agriculture. The Applied Biological and Agribusiness Interest Inventory was used to detect student vocational agriculture interest.

Findings. The findings indicated that there were no significant differences in student interest scores among the three grade levels (seven, eight, nine). However, a significant F ratio was obtained among the student interest scores based on three experimental groups. A follow-up analysis indicated that differences only existed between means of the two groups receiving the treatment. Agricultural pretest and posttest interest scores were significantly different based on gender, student desire to enter agricultural occupation upon completion of high school, and student intent to enroll in high school vocational agriculture. Based on gender, male student pretest and posttest scores were significantly different while scores for female students were not. Also, posttest scores for male students were significantly higher than those scores for female students. Those students interest scores who gave positive responses to intent to enroll in high school vocational agriculture and who desired agricultural post high school jobs showed significant differences.

CONNOR, Elda. "Relationship Between Level of FFA Participation and Personal and Social Attitudes of Former Vocational Agriculture Students." Master of Education Thesis, 1982, The Pennsylvania State University, University Park.

Purpose. This study focused on determining the relationships between level of FFA participation, personal, and educational factors and the personal, social, and total attitudes of vocational agriculture graduates. It was hypothesized that no relationships would be found between the level of FFA participation, personal, and educational factors and the personal, social, and total attitudes of former vocational agriculture graduates.

Method. The study utilized a questionnaire (descriptive survey research) to collect the data. The questionnaire consisted of the Social Desirability Scale (Crown and Marlowe; 1964) and the Various Social Attitudes Scale (Campbell; 1966). The questionnaire was mailed to 148 randomly selected vocational agriculture graduates (1978 through 1982) from seven high schools in Westmoreland and Indiana Counties in Pennsylvania. Data were collected from a total of 74 vocational agriculture graduates.

Findings. Findings indicated that vocational agriculture graduates who had received FFA proficiency awards, participated in FFA social or recreational activities, served on FFA committees, held assistant officer positions, and earned higher degrees in the FFA expressed more positive personal, social, or total attitudes. Additionally, findings indicated no significant relationships between the remainder of the identified level of FFA participation, personal, and educational factors and the personal, social, and total attitudes of former vocational agriculture graduates.

DIAMOND, James E. "The Effects of Task Instruction Sheets on the Performance of Three Groups of Clientele Studying Sheep Production." Doctor of Philosophy Dissertation, 1981, The Pennsylvania State University, University Park.

Purpose. The purpose of the study was to investigate the effects of using task instruction sheets on the performance scores of three clientele groups studying sheep production. It was theorized that the use of task instruction sheets would augment the performance scores of clientele studying psychomotor tasks.

Method. The population samples for this study consisted of three randomly selected clientele groups. The clientele groups were part-time adult shepherds, 4-H club members and vocational agriculture students. The clientele groups were divided into two treatment levels; one level was given task instruction sheets and one level was not. Eighteen sheep clinics were conducted to offer instruction on six competency-based sheet production tasks. The six tasks were identical in all the clinics. The instructors explained and demonstrated each of the tasks. The clientele practiced the tasks and were evaluated on their performance using a criterion-referenced measure.

Findings. Analysis of variance (ANOVA) was used to determine if a significant difference existed between treatment levels. The Duncan's Multiple Range Test was used to identify where significant differences occurred between treatment levels. Three hypotheses were formulated and tested. The major finding of the study revealed that clientele who were given task instruction sheets scored significantly different than clientele who were not given task instruction sheets.

GONZALEZ, Ismael M. "The Professional Competencies Needed By Extension Agents, The Pennsylvania Cooperative Extension Service." Doctor of Philosophy Dissertation, 1982, The Pennsylvania State University, University Park.

Purpose. The main purpose of this study was to identify and verify the professional competencies needed by extension agents in the Pennsylvania Cooperative Extension Service as perceived by extension agents and state staff members. A subsidiary purpose was to identify when the competencies should be learned by the extension agent.

Method. The target population for this study consisted of county, area, and regional agents in the Pennsylvania Cooperative Extension Service. From this population, a stratified random sample of extension agents in agriculture and natural resources, family living, 4-H, and community development from the nine administrative regions of Extension was selected for the study. A packet that included a questionnaire, cover letter, and self-addresssed stamped envelope was mailed to 116 extension agents and state staff members. Descriptive statistics were used to analyze the data obtained for the demographic characteristics and the section regarding the time when each competency should be learned. Regression analysis was used to test the hypothesis indentified for the study at an alpha value of .05.

Findings. The findings indicate that there were no significant differences in the perceptions of extension agents and state staff members regarding the importance of the nine competency categories. The combined demographic factors showed a significant effect only for the competency categories labeled teaching and program planning. Individual predictor variables such as age, educational level, and years of 4-H membership also showed a significant effect in the case of the youth, program execution, and administration competency scales. All 144 competencies were considered to be moderate to very high in importance. The two groups rated 68 competencies 4.00 or higher, while the remaining 76 competencies received combined ratings of at least 3.00. In identifying when the competencies should be learned, the combined responses for extension agents and state staff members indicated that 26 competencies should be learned before entering the job, 6 competencies during a graduate program, and the remaining 113 can be learned on the job or through inservice. Finally, competencies included in the teaching, communication, and understanding human behavior categories should form a key component of any undergraduate program developed for preparing extension agents.

HAMILTON, George W. "Competencies Needed By Full-Time Employees Entering The Apple Production Industry in Adams County, Pennsylvania". Master of Science Thesis, 1982, The Pennsylvania State University, University Park.

Purpose. The purpose of this study was to identify the competencies needed by full-time employees entering the apple production industry. Additionally, the study identified differences among competencies needed for full-time employees working for: (1) large, medium, and small growers (based on acreage), and (2) growers with fresh market, processing market, or combination of marketing outlets.

Method. The design for the study was a descriptive survey. The population for the study consisted of all apple producers listed on the 1978 Apple Referendum list for Adams County, Pennsylvania. A census of 114 apple growers was taken. An instrument was developed which obtained basic background information regarding the respondents' operation and the ratings for the technical apple production competencies. The respondents were asked to rate the competencies using the following scale: 5 = absolutely essential, 4 = requiring above average competence, 3 = requiring average competence, 2 = requiring little competence, and 1 = requiring no competence. A total of 62 (54.4%) growers responded to the mail survey. Nine (17.9%) growers that had not responded to the mail survey were randomly selected to be interviewed. The interviews were conducted to determine whether there were any significant differences between the mailed surveys and the interview survey. In 20 of 21 competency areas no significant difference was found; therefore, the mail and interview grower responses were combined. A total of 71 (62.4%) growers' responses were used in this study.

Findings. The apple growers were in agreement on their ratings of competence needed for full-time entry level employment on 18 of 21 competency areas, regardless of the size of growers' operation. Regarding growers' principal market outlet, apple growers' ratings of competence showed that the growers were in agreement on 20 of 21 competency areas. One hundred ninety-five of 210 competency statements were rated 3.0 (average) or higher. It is recommended that instruction for apple production be based upon the results from this study.

HEASLEY, Paul L. "Microcomputer Assisted Instruction in Teaching Concepts of Farm Business Management to Voctional Agriculture Students". Master of Science Thesis, 1982, The Pennsylvania State University, University Park.

Purpose. The purpose of this study was to develop and evaluate a microcomputer assisted farm business management instructional series through a teaching and learning experiment with vocational agriculture students.

Method. A farm business management instructional series was developed around four concepts found in the National FFA and Pennsylvania FFA Farm Business Management contests. A microcomputer instructional program was developed to supplement the series. An achievement test and an attitude inventory, using a semantic differential scale, were developed to assess the students' achievement and attitudes toward farm business management. Fifty-two vocational agriculture students from Central Columbia, Eastern York, and Solanco School Districts were randomly assigned, using Yates randomized number table, to the two treatment levels.

Findings. Analysis of variance with repeated measures was used to analyze the data. Use of the microcomputer did not significantly increase the achievement levels or change the attitudes of those students who utilized both the instructional series and the microcomputer assisted instructional program.

KERR, James M. "The Influence of Occupational Experience on Horticulture Teacher Effectiveness." Master of Science Thesis, 1982, The Pennsylvania State University, University Park.

Purpose. The major purpose of this study was to assess the effectiveness of secondary horticulture teachers, with various levels of occupational competence, in preparing students for entry-level employment.

Method. This ex post facto study involved a follow-up of one- and two-year secondary horticulture program graduates and the employers of these graduates. A questionnaire was developed to assess the effectiveness of horticulture programs and the impact of instructors' occupational background in preparing individuals for the horticulture trade. Data were collected regarding the extent to which graduates perceived they were prepared for employment and the extent employers perceived the graduates were prepared for employment. Subjects in the study were limited to individuals that had received instruction in greenhouse production and were employed in that trade.

Findings. Overall, the graduates of secondary programs where the teacher had a substantial amount of occupational work experience rated their level of competence in greenhouse production higher than graduates of programs where the teacher had a minimal or limited amount of work experience. Within the specific areas of greenhouse, graduates taught by a teacher with a substantial amount of occupational work experience had higher self-perceived competency ratings in all but two of 13 areas. Employers rated graduates taught by teachers with a substantial amount of greenhouse occupational work experience higher in the following greenhouse production areas: plant pests and pesticide usage, quality and quantity of knowledge and work in greenhouse area, poinsettia production, chrysanthemum production, lily production, and bedding plant production.

LAUFFER, Robert. "Influence of Wildlife Contest Participation On Student Achievement." Master of Education Thesis, 1982, The Pennsylvania State University, University Park.

Purpose. The purpose of this study was initially to determine if there was sufficient interest among Pennsylvania vocational agriculture teachers to warrant the development and implementation of an FFA Wildlife Contest for inclusion in Pennsylvania State FFA Activities Week. Secondly, an FFA Wildlife Contest was pilot tested at the local county level.

Method. In 1979, 56 FFA members participated in the Lancaster County FFA Wildlife Contest. The quasi-experimental portion of the study involved a group of 36 environmental agriculture students from Garden Spot High School. Seven of these 10th-grade students received the treatment of a unit of instruction in wildlife conservation plus participation in a Lancaster County FFA Wildlife Contest. Twenty-nine students received the treatment of an instructional unit, but did not participate in the wildlife contest. An additional 22 tenth-grade students were used as a non-treatment group.

Findings. All 58 students were administered a pretest and posttest. Analysis of covariance was used to adjust posttest scores for differences in pretest score. Analysis of the data for the quasi-experimental portion of the study indicated that students receiving both the treatments (unit of instruction and contest participation) had significantly higher adjusted posttest scores than either the unit only treatment or the no-treatment group. In light of this study, it is recommended that all FFA contests should be continually evaluated and revised. It is also recommended that this type of study be replicated with other FFA contests to gain insight into the educational effectiveness of FFA contests. A comprehensive set of resource materials geared specifically to teaching and preparing students for the State FFA Wildlife Contest should be developed and made available.

LAYTON, Theodore G. "An Evaluation of Delaware FFA Contests by the Vocational Agriculture Teachers in Delaware." Masters of Education Thesis, 1982, The Pennsylvania State University, University Park.

Purpose. The purpose of this study was to identify the factors affecting the participation and non-participation in FFA contests by teams coached by Delaware teachers of vocational agriculture having FFA chapters.

Method. All FFA advisors in Delaware, with the exception of beginning teachers having less than one year of experience, were surveyed to obtain responses to questions about 24 state FFA contests. Teachers who coached teams were asked to evaluate the contests, and teachers who did not coach teams were asked to respond as to why they did not participate. The survey instrument included criteria for evaluating each contest on a 1 to 5 scale with 3 being an adequate score. In addition, background information about each teacher and his/her teaching environment was obtained. The information was obtained to test three hypotheses.

Findings. All 24 contests received a rating greater than three. Participation was below 30 percent in one-third of the state contests despite the above adequate ratings. The number one reason for non-participation was "lack of student interest" with "not in my subject area" being the second most frequent response. Evaluation of the contests and testing of hypotheses give a basis for recommendations to improve the level of participation in the Delaware contests.

LEIBY, Robert E. "Utilization of Life Cycle in Making Colorado Potato Beetle Control Decisions." Master of Education Thesis, 1982, The Pennsylvania State University, University Park.

Purpose. The major purpose of this study was to develop a slide presentation to inform potato growers about properly timing foliar insecticide applications to control the Colorado potato beetle.

Method. Data were collected from six Lehigh Valley, Pennsylvania, potato farms over a thirteen week period during the summer of 1981. Five potato plots were sampled at each farm on a weekly basis. The number of Colorado potato beetle eggmasses, larvae and adults were counted in each plot. In addition, the potato growers reported the dates that they had applied foliar insecticides to control the Colorado potato beetle.

Findings. The results indicated that there were two generations of Colorado potato beetles present with the second generation being more severe. The actual timing of most foliar insecticide applications did not appear to coincide with the most practical time for foliar insecticide application. A slide set was prepared to illustrate the importance of properly timing the foliar insecticide applications. This slide set presented information on the life cycle of the Colorado potato beetle. Also, the slide set emphasized the importance of scouting the potato fields for pests and timing the sprays to provide the most cost-effective control.

LEONARD, Colin A. "Characteristics Used by Outstanding FFA Vocational Agriculture Students in Identifying Ornametal Plants." Master of Education Paper, 1982, The Pennsylvania State University, University Park.

Purpose. The need for vocational agriculture students to obtain the skill of plant identification has been generally accented. The question of how vocational agriculture students undertake the plant identification process has not. The answer to this question would allow both teacher and student to maximize both time and effort.

Method. Students competing in the Ornamental Horticulture Contest at the National Future Farmers of America Convention in 1975 and 1976 were the study group. They completed a questionnaire at the completion of the contest explaining how they identified certain representative plants. The plants included on the survey instrument were a representative sample for both the Greenhouse-Floral Design and Nursery-Landscape areas of the National FFA Contests.

Findings. It was determined that the students who placed in the top award group (Gold) used more features and items on and about the plant than did those students who placed in the bottom award group (Honorable Mention). The top award group (Gold) within the greenhouse area of specialization relied on leaves, habit of growth, flowers and stems. The top award group (Gold) within the nursery area of specialization when dealing with summer condition questions (in leaf) relied on leaves, habit of growth, stem and twig. When dealing with winter condition questions (without leaf) they relied on buds, twigs, habit of growth and bark. The hypothesis that the top award group(Gold) would differ in their identification process from the bottom award group (Honorable Mention) identification process was accepted. The hypothesis that all students in the National Ornamental Horticulture Contest would examine the overall plant for identification was rejected.

MAKIN, Richard C. "Instructional Status of Agricultural Mechanics Competencies Needed and Possessed by Teachers of Vocational Horticulture in Pennsylvania." Master of Science Thesis, 1981, The Pennsylvania State University, University Park.

Purpose. The purpose of this study was to ascertain if any agricultural mechanics were being taught, whether the competencies being taught should be taught, and the degree of proficiency at which mechanics competencies were being taught.

Method. The study was conducted by surveying vocational horticulture teachers and horticulture businesses. The teachers' responses to the agricultural mechanics competencies centered upon their proficiency while the businesses' responses were related to the importance of the competency for success in their particular enterprises.

Findings. It was found that horticulture teachers in Pennsylvania were in fact teachers of agricultural mechanics; statistical analysis of the data indicated agricultural mechanics being taught at limited levels prior to assigning any importance to the competencies. After importance values were calculated from the business input, it was found that a majority of horticulture teachers was teaching a majority of the "most important" agricultural mechanics competencies. Instruction in agricultural mechanics by vocational horticulture teachers was being provided in the proper mechanics areas. However, instruction at a less than optimum level was being provided in relation to the importance assigned by the horticulture industry. There was a significant difference between teacher proficiency and business importance for 14 of the 15 "most essential" competencies and 18 of the 55 "essential" agricultural mechanics competencies. Although they were teaching the correct mechanics instructional areas, horticulture teachers need to further develop their agricultural mechanics expertise. Secondary objectives of the study dealt with the effect of sex, years of teaching experience, and place of employment on the proficiency levels of the horticulture teachers. Of the three, only six accounted for significant differences in proficiency levels for a majority of the agricultural mechanics competencies. The null hypotheses were rejected for a total of 105 of the 171 competencies. The number of years of teaching experience accounted for rejection of the null hypotheses for only 14 of the competencies; whereas, 28 of the competencies had significant differences for the variable place of employment.

MALLILO, Anthony T. "Agriculture Education Preservice Instruction for Teaching Handicapped Students." Doctor of Philosophy Dissertation, 1982, The Pennsylvania State University, University Park.

Purpose. The study tested the effects of an experimental unit of instruction on preservice teachers' knowledge of teaching handicapped students. It was hypothesized that agricultural education students taught by means of the new unit would score significantly higher on a posttest assessment instrument than students instructed by means of the current unit being utilized in a "Methods of Teaching High School Vocational Agriculture" course.

Method. The study utilized a pretest-posttest control group design during the 1981 summer term with a repetitive measure utilizing a quasi-experimental (non-equivalent control group) design during the 1981 fall term. Data were combined from students enrolled in Agricultural Education 12v during the 1981 summer and fall terms. In toto, there were 22 and 14 preservice teachers in the experimental and control groups, respectively.

Findings. Findings indicated that students taught by means of the experimental unit scored significantly higher on the Preservice Teachers Knowledge of Handicapped Students Assessment Instrument. Additionally, findings indicated no significant differences between (1) posttest scores and selected demographic variables, and (2) observed teaching behaviors for either control or experimental group as measured by the Observation System for Instructional Analysis Instrument.

MARTIN, Robert A. "Implication of Selected Supervisory Techniques To Success of Beginning Teachers of Agriculture." Doctor of Philosophy Thesis, 1981, The Pennsylvania State University, University Park.

Purpose. The study tested the effects of two systems of supervision--product specification and process specification--to the success of beginning teachers of vocational agriculture. Product specification is based on supervision-by-objectives, a student-centered emphasis. Process specification is based on management of the teacher and his/her activities, a teacher-centered emphasis. It was hypothesized that supervisory techniques based on product specifications would be perceived to be more effective.

Method. The study used an experimental, posttest-only control group design. Data consisted of measures from each of the following groups: 28 secondary school supervisors, 28 teachers, and 384 students in 18 comprehensive high schools and ten vocational technical schools in Pennsylvania.

Findings. Findings indicated significant differences in student perceptions of teaching style as measured by the Student Perception of Teacher Style Survey. Additionally, analysis of the subscales of the three supervisory questionnaires indicated significant differences in teacher perceptions in the following areas of supervision: goal commitment, decision-making procedures, emphasis on objectives, challenge, control over resources, knowledge of results and intrinsic rewards. Findings indicated no significant differences in (1) student achievement test scores, (2) supervisor effectiveness scores as rated by teachers on the Likert Profile of a School Survey for school supervisors, (3) supervisor behavior ratings as perceived by teachers on the Supervisory Behavior Description Questionnaire for supervisors, (4) supervisor effectiveness ratings regarding goals and objectives as perceived by teachers on the Job Objective Questionnaire and (5) supervisor effectiveness scores obtained by self-rating using the three instruments.

MONAHAN, John E. "An Assessment of Pennsylvania Milkers' Schools by County Agent Instructors." Master of Education Paper, 1982, The Pennsylvania State University, University Park.

Purpose. The purpose of this study was to gather and analyze the opinions of participating Cooperative Extension county agent instructors concerning selected aspects of a newly designed series of milkers' schools. The assessment determined the strengths and weaknesses of the program and developed recommendations for future milkers' school modifications. This assessment provided information useful in determining the need for conducting additional instructor training sessions and to update or improve upon the audio/visual materials used.

Method. A three part questionnaire was developed to survey the Cooperative Extension county agent instructors participating in the 1982 Pennsylvania State University Milkers' Schools. Returns on the mailed questionnaire were received from 88.2 percent of the sample. The survey instrument consisted of 77 questions and was designed to determine how well the instructors thought the educational sessions were conducted and what areas the instructors believed needed to be modified for future milkers' schools. Instructors were asked to respond on a Likert-type scale to a series of statements.

Findings. This assessment showed that the newly designed series of milkers' schools allowed dairy specialists to provide more schools, cover more counties, and reach a larger audience of interested dairy farmers by training county agents to teach at the county level. Findings of this study were: (1) An additional instructor training seminar should be scheduled and the emphasis placed on the three sessions; (2) The three sessions, The Physiology of Milk Secretion, Mastitis, and The Development of the Mammary Gland should be carefully reviewed in an effort to modify the difficulty of these concepts; (3) Revision of the audio/visual materials should be made; (4) Encourage county agents to make better use of the self-test before and after the milkers' school; and (5) A follow-up evaluation from the dairy farmer participants should provide additional input for planning future schools.

OGLINE, Philip Henry. "An Analysis of Hunter Attitudes Toward the Safe Use of Firearms." Doctor of Philosophy Dissertation, 1981, The Pennsylvania State University, University Park.

Purpose. The purpose of this study was to investigate Pennsylvania hunters' attitudes toward safe firearm handling concepts and to determine the relationships of these attitudes with the hunters' accident records. The study also was designed to develop profiles of Pennsylvania hunting accident victims-known offender, victims-unknown offender, victims-self inflicted, accident-offenders, and accident-free hunters.

Method. A random sample consisting of 420 Pennsylvania hunters was selected to participate in this study. They were asked to identify their attitudes toward selected firearm safety concepts. The selected firearm safety concepts were defined as recognized safe operating rules or practices in handling firearms. Twenty-two visuals with captions and 17 written statements, both with a Likert-type scale, were used to collect the attitudinal data. The five-point Likert scale measured each respondent's extent of agreement or disagreement to each of the safety concepts. The attitudinal instruments used in this study were developed with the aid and cooperation of a Research Advisory Council. In addition, a jury of 34 respondents served as a field test for the survey forms. An internal consistency analysis using the Kuder-Richardson program yielded a reliability coefficient of .84 for the visuals with captions. The internal consistency for the attitude statements was .86.

Findings. The attitudinal instruments indicated that the 267 respondents had positive attitudes toward safe firearm handling concepts regardless of their accident record. It was concluded that Pennsylvania hunters who had been involved in hunting accidents expressed similar attitudes toward safety after the occurrence of the accident as accident-free hunters. In addition, hunters' expressed attitudes did not differ significantly regarding hunting safety when analyzed by age, residence, or years of hunting experience.

PIERSON, Timothy G. "The Need, Development, and Evaluation of Task Instruction Sheets for Chain Saw Safety, Operation, Maintenance, and Repair." Master of Education Paper, 1982, The Pennsylvania State University, University Park.

Purpose. The purpose of this study was to determine the status and the need for instructional materials on chain saw safety, operation, maintenance, and repair and if the need existed to develop and evaluate a series of task information sheets on chain saws.

Method. A postcard survey was conducted including all (372) Pennsylvania vocational agriculture teachers to determine the status of chain saw instruction and the need for instructional materials in vocational agriculture programs in Pennsylvania.

Findings. The results of the survey indicated a need for instructional materials and a task analysis concerning chain saw safety, operation, maintenance, and repair was conducted. Thirty-nine tasks were identified and 21 task instruction sheets on chain saws were developed. The task instruction sheets were evaluated using vocational agriculture teachers attending an inservice workshop. A 12-item Likert-type evaluation form was used to determine the usefulness of the task instruction sheets. It was concluded that the teachers found the content of the task instruction sheets safe, comprehensive, readable, and accurate. The teachers perceived the task instruction sheets to be useful and effective in teaching chain saw safety, operation, maintenance, and repair.

RAGON, Phillip C. "A Discussion of Attached Solar Greenhouses For Home Heat and Food Production In Pennsylvania." Master of Agriculture Paper, 1981, The Pennsylvania State University, University Park.

Purpose. The purpose of this paper was to determine the effectiveness of an attached solar greenhouse for home heat and food production in Pennsylvania.

Method. Data for the paper were collected from previous research studies. This investigator's estimations about heat production for home use, using an attached solar greenhouse, are based on mathematical calculations and are only an estimate of what may be expected.

Findings. Based on the information presented in this paper and references used, it is the opinion of the investigator that an attached solar greenhouse can be used to provide supplemental heat and food to a home in Pennsylvania. The amount of either heat or food that can be produced is highly variable depending upon design, location, weather, management of the greenhouse, and other factors already discussed. An attached solar greenhouse is not the answer to all winter heating bills or grocery bills. However, it is the opinion of the investigator that, given all conditions favorable, as far as design, weather, location, etc., an attached solar greenhouse can help reduce winter fuel bills and provide a source of fresh vegetables. If energy costs continue to climb, the attached solar greenhouse will become more and more favorable in the future.

REYNOLDS III, Arthur E. "Development and Evaluation of a Multicylinder Gasoline Engine Unit of Instruction with Task Sheets." Master of Education Thesis, 1981, The Pennsylvania State University, University Park.

Purpose. The purpose of this study was to develop and evaluate an instructional unit for multicylinder gasoline engines. The unit was designed to be used by vocational agricultural mechanics teachers with minimum experience and expertise in teaching multicylinder gasoline engine theory and practice.

Method. The instructional unit consisted of a teacher manual and a student manual. The teacher manual contained pertinent terms, equipment and procedures to be used by the instructor. The student manual contained individual tasks for the complete disassembly, inspection, identification, reassembly and starting of a six cylinder gasoline engine. A jury of vocational teachers field tested and evaluated the complete instructional package. Recommendations of this jury were considered during the final development stages of the package. One hundred and eight vocational agricultural mechanics students were involved in the study.

Findings. Conclusions as a result of this study were: (1) The unit of instruction developed was an effective method of teaching hands-on multicylinder gasoline engine mechanics to first year vocational agricultural mechanics students, (2) Student achievement was not significantly affected by age, area of residence, grade level or school year, (3) Student achievement was significantly affected by level of previous experience, career goals and leisure time activities. Students with mechanics related career goals, leisure time activities and some experience scored higher on both the pre and posttests.

SATILLO, Pedro Francisco Rodriguez. "Rural Education in Venezuela: A Case Study of the Community of Agua Negra." Master of Agriculture Paper, 1980, The Pennsylvania State University, University Park.

Purpose. The purpose of this study was to examine rural education in Venezuela generally, and more specifically through a case study of the community of Agua Negra in Barinas State (Venezuela). This examination was directed toward awakening national concern for establishment of an adequate educational system for the "rural sector" and for the rural resident.

Method. The population for the case study in this examination of rural education consisted of 623 students and 34 teachers in the 2 schools located in the community of Agua Negra. Both students and teachers were surveyed to obtain biographical data relative to age, sex, educational level, goals and expectations, and home environment. Types of teaching material, agricultural resources and instructional facilities were also studied.

Findings. The following were among the major findings of this study: (1) Nearly 60 percent of the 623 students enrolled in grades 1 and 6 of the basic common cycle, are between 15 and 18 years of age. This age range indicates that a number of these students are academically behind the norm in these two schools, (2) While 68 percent of the students' parents were engaged in production agriculture, only 25 percent of the students expressed an interest in being involved in activities within the agricultural

sector after finishing school, (3) In general, supervision, evaluation and registration of students are carried out equally in rural and urban areas, (4) Over 85 percent of the teachers in the two rural schools studied live outside Agua Negra, thus creating a high degree of teacher absenteeism during 4 day weekends, (5) Teachers in the two schools studied had 1 to 5 years teaching experience (85.3 percent) and are between the ages of 23 to 27 years, (6) Teachers in these schools are nearly equally divided between male (56 percent) and female (44 percent), (7) All of the teachers surveyed have received some types of professional improvement courses beyond basic teacher education while 67.6 percent participated in the revised program. (The curriculum is revised each year according to the needs of the rural sector.), (8) Ninety percent of the teachers surveyed are discontent with teaching in the rural area because of a lack of sufficient monetary as well as other incentives (e.g., living conditions, transportation), (9) About 75 percent of the teachers indicated that the current educational programs are not adapted to rural education and its demands because they lack the necessary teaching and production materials and tools. Others said that basic laboratory and field installation, financial assistance and working equipment are lacking, and (10) Of the female students registered in the agriculture and teaching areas, 12.6 percent selected agriculture and 87.4 percent enrolled in teaching.

SEDLAK, Michael A. "Guidelines for Constructing Greenhouses for Pennsylvania Vocational Program." Master of Education Thesis, 1982, The Pennsylvania State University, University Park.

Purpose. The purpose of this study was to establish guidelines for the construction of efficient and safe greenhouse facilities for secondary vocational horticulture programs in Pennsylvania. These guidelines are intended to complement the existing research and recommendations available.

Method. The study surveyed 67 vocational agriculture instructors identified by the Pennsylvania Department of Education who are teaching full-time horticulture curriculums. The instrument was designed to survey three major areas: the relationship of the greenhouse to the type of program and to the student learners, the general construction characteristics of the greenhouse, and the safety of the greenhouse in terms of its physical construction. The instrument was reviewed by a three-member screening committee consisting of two full-time horticulture teachers and one general agriculture teacher. As a result of the screening, the final instrument contained 37 questions directly related to the major areas of investigation, and was designed to allow the same question to be applied to more than one greenhouse at the same institution. The questionnaires were mailed to the population along with a return envelope. Those not responding after a two-week period were sent follow-up letters and a second instrument. Forty-five teachers, 67 percent of the population, responded.

Findings. The results were compiled and the following conclusions were made. Most greenhouses being used in secondary vocational horticulture programs were (1) adequately serving the student needs in terms of physical construction and size, (2) being used to their fullest potential, and (3) not constructed with adequate safety considerations. Based on these findings, 21 guidelines were recommended for consideration in the construction of a new greenhouse facility.

SIMMONS, Joel T. "The Effect of A Floral Merchandising and Design Record Book on Student Achievement." Master of Science Thesis, 1982, The Pennsylvania State University, University Park.

Purpose. The purpose of this study was to field test a floral merchandising and design record book. The relationships between the use of the record book and student achievement in producing a profit-making floral design and in cognitive development were examined.

Method. The design chosen for the study was a modified separate-sample pretest-posttest design. The sample for this study included the horticulture students of eight high schools and area vocational-technical schools with horticulture and floriculture departments in southeastern Pennsylvania. Ten schools were contacted by telephone and eight met the criteria. All eight schools were used in the study; the schools were randomly assigned to one of the two levels of the treatment. Four classes received the Floral Merchandising and Design Record Book and four posttests; four classes received only the teachers' traditional instructional materials and four posttests.

Findings. The principal conclusion of the investigation was that the Floral Merchandising and Design Record Book was effective in helping students obtain a higher floral design income. The results supported the belief that the students who received the Floral Merchandising and Design Record Book would score higher on a practical floral design income test than students who received only the teachers' traditional instructional materials.

STICKLE, Thomas A. "An Investigation of Selected Approved Practices for Deer Propagation." Master of Education Paper, 1981, The Pennsylvania State University, University Park.

Purpose. The purposes of this paper were to identify: (1) the laws associated with confinement raising of whitetail deer in Pennsylvania; (2) what practices propagators in Pennsylvania currently are using for herd fencing, feeding, breeding and herd health; and (3) what practices are appropriate for raising deer in confinement throughout the state.

Method: The method used to determine current practice of Pennsylvania deer propagators was the development and use of a questionnaire to survey the 103 licensees in Pennsylvania, from whom 31 responses were received.

Findings. A review of the scientific literature on raising deer in confinement and application of the findings therein resulted in recommending that the following practices be used in Pennsylvania deer propagation: (1) the use of safety fence such as sheep netting for fawns; (2) the use of New Zealand type fencing for red deer; (3) the use of cow's milk as the best substitute for doe's milk; (4) the use of free choice feeding methods, using deer rations meeting specifications developed with The Pennsylvania State University research herd; (5) the use of antler size to determine the health of mature bucks; (6) the application of ruminant nutrition practices to deer management; (7) including range feeding in preserves with minimal undergrowth; (8) providing natural browse; (9) for breeding, the maintenance of a buck-doe ratio of 12-15 does per buck, to achieve the optimum fawning rate of 200 percent (the evidence on buck-doe ratios is somewhat inconclusive); (10) for artificial breeding, the use of procedures followed for cattle; and (11) the injection of diethylcarbamizine as treatment for lungworms, prevalent among young deer.

STOVER, Ward M. "A Regional Leadership Development Program: A Case Study of Armstrong and Indiana Counties, Pennsylvania." Master of Education Paper, 1981, The Pennsylvania State University, University Park.

Purpose. The purpose of this study was to examine the levels and types of respondents' participation in organizations and their involvement in community activities before and after a county leadership development workshop.

Method. The study focused on the Armstrong-Indiana Counties Leadership Development Workshop. The workshop, held from January 20 to April 21, was the result of program direction provided by the Indiana County Extension Study Committee. Thirty-eight participants enrolled in the workshop that focused on public issues.

Findings. Even though the findings did not produce strong statistically significant support for the expected findings, the trend was in the anticipated directions. Moreover, there were logical and consistent answer patternings derived from the analysis of data. Finally, personal observation supports these findings in that several participants currently hold significant leadership positions within a variety of volunteer organizations, agencies, and governmental bodies at county, state, and national levels.

STUTZMAN, James C. "The Development of a Course of Study Integrating Career Planning Activities with Agricultural Production for a Junior High Program at Meyersdale Area School District." Master of Education Paper, 1982, The Pennsylvania State University, University Park.

Purpose. Objectives of this paper were: (1) to construct an effective course of study; (2) to aid students in developing job briefs or information for a comprehensive brief; and (3) to help students and teachers recognize success is not a point in time, but a journey throughout life. Most emphasis was placed on integrating vocational and career education.

Method. An assessment of current knowledge in occupations and related technical knowledge is an essential part of instruction. Hence, a test of this nature was developed as part of this course of study. The pretest was designed to evaluate the knowledge of career development and agricultural production the students possessed at the beginning of the course of instruction. The posttest provided an immediate evaluation of the effectiveness of the course of study.

Findings. A comprehensive course of study that included teachers' unit and lesson plans was constructed. The following list of subjects was developed into unit and lesson plans for animal production: dairy, beef, sheep, swine, poultry, and horses. Each of these units included the following areas of investigation: identification of breeds, selection of livestock, breeding livestock, feeding livestock, sanitation practices, housing techniques, and marketing methods. By taking one of the six units at a time, incorporating all seven areas of investigation, and integrating career information, a satisfactory lesson plan was constructed for animal production.

Using the same procedure for plant production, it was possible to identify the topics for unit plans. Following is a list of topics selected for unit titles in plant production: field crops, vegetables, and fruits and nuts. Each of these three units included these eight areas of investigation: identification of seeds and/or plant, selection of varieties, method of establishment, nutritional requirements, pest control, storage requirements, and marketing techniques. Taking each of the three topics at a time, and utilizing all eight areas of investigation, plus integrating career development information, a dynamic lesson plan was designed for plant production.

THOMPSON, Dale E. "Recommendations for Arkansas Vocational Agriculture Program Improvements Based on Perceptions of Superintendents, Vocational Agriculture Teachers and Vocational Agriculture Students." Doctor of Philosophy Dissertation, 1982, The Pennsylvania State University, University Park.

Purpose. The major purpose of this study was to identify and describe perceptions of selected groups toward Arkansas vocational agriculture programs. Areas investigated in this study were the total vocational agriculture program, Future Farmers of America, supervised occupational experience, and the primary goals and objectives for vocational agriculture. A secondary purpose of the study was to investigate relationships between the perceptions of the group and selected personal, educational and occupational characteristics.

Method. The 20 percent stratified random sample for this study consisted of clientele groups selected from secondary schools offering vocational agriculture in Arkansas. Data were collected from the superintendents, vocational agriculture teacher, and three vocational agriculture students at 50 of the 241 Arkansas schools offering vocational agriculture. Analysis of variance (ANOVA) was used to determine if a significant difference existed between clientele group perceptions. The Duncan's Multiple Range test was used to identify where significant differences occurred. Omega squared was used to identify practical differences.

Findings. Four hypotheses were formulated and tested. The major results of the study revealed that clientele groups had significant and practical differences in perceptions regarding the total vocational agriculture program, FFA, SOE, and the primary goals and objectives of vocational agriculture. The major factor which affected group perceptions regarding all areas of the vocational agriculture program was their perceptions of the primary goals and objectives of vocational agriculture. Few of the personal, educational and occupational characteristics affected perceptions.

WAGNER, Samuel R. "The Development and Evaluation of a Series of Modules in the Operational Level of Small Gasoline Engines." Master of Education Thesis, 1981, The Pennsylvania State University, University Park.

Purpose. The purposes of this study were to develop and evaluate a series of small gasoline engine modules that could be used in vocational agricultural classes.

Method. Vocational agricultural teachers at three schools agreed to pretest, teach ten modules, and posttest with their vocational agricultural classes. Also, a jury of experts agreed to review all 20 modules and complete an evaluation form. The information from these two sources was used to compile data and suggest revisions in the modules.

Findings. It was found that learning took place as the ten modules were tested. Both the score means and paired t-test scores indicated that the students learned. The jury of experts rated all 20 modules high. This is an indication that the modules will be useful in vocational agricultural classes.

WATERS, Randol G. "Objectives for Collegiate FFA Chapters in Agricultural Teacher Education Programs, A Delphi Study." Master of Science Thesis, 1982, The Pennsylvania State University, University Park.

Purpose. The purpose of this study was to establish a set of objectives to be used for organizing collegiate chapters of the Future Farmers of America sponsored by teacher education programs in agriculture.

Method. The Delphi Technique was used to identify these objectives. A panel of experts was identified by randomly selecting collegiate FFA chapters from a national collegiate organization directory. The panel was sent a series of three questionnaires. Each questionnaire was developed using responses gathered from the preceding one.

Findings. A set of 45 objectives was developed and rated by the panel. Mean scores for the ratings were computed in order to determine the importance of each objective. Standard deviations were computed to determine consensus among panel members. The original 45 objectives were grouped into five major categories: (1) FFA advisor skills development, (2) personal development, (3) organizational support, (4) service activities, and (5) social growth. It was found (based upon an average response rate of 66 percent) that those identified as "FFA Advisor Skills Development" and "Personal Development" objectives were the most important objectives for collegiate FFA. It was also found that "Organizational Support" and "Service Activities" were considered as having above average but not as much importance as the first two categories. "Social Growth" objectives were rated important by the panel; however, fewer objectives were identified in this category than in the other four.

STUDIES IN PROGRESS

AURAND, Edwin L. "Identification of Competencies for the Agricultural Business and Ag Mechanics Curriculum at Juniata-Mifflin AVTS." Master of Education Paper, The Pennsylvania State University, University Park.

AYEWOH, Michael E. "Assessment of the Adequacy of the Professional Training Received by Senior and Junior Agricultural Extension Staff in Bendel State of Nigeria." Doctor of Philosophy Dissertation, The Pennsylvania State University, University Park.

BORAN, Karen. "Perceptions of the County Home Economist." Master of Science Thesis, The Pennsylvania State University, University Park.

COON, Terry. "Use of Newspapers to Teach Agriculture in the Elementary Grades." Master of Education Paper, The Pennsylvania State University, University Park.

CRAYS, Joyce. "Statewide Assessment of Sheep Producers Marketing and Agronomic Practices." Master of Education Paper, The Pennsylvania State University, University Park.

CURTIS, Samuel M., SCANLON, Dennis and BAGGETT, Connie. "Status of Special Needs Students in Pennsylvania." Staff Study, The Pennsylvania State University, University Park.

DAMRONGKIATTISAK, Wittaya. "Assessment of the Communication Role Performance of Sub-District Extension Agents in Thailand." Doctor of Philosophy Thesis, The Pennsylvania State University, University Park.

DECKER, Kenneth O. "Revision of The Pennsylvania FFA State Forestry Contest." Master of Science Thesis, The Pennsylvania State University, University Park.

EASTER, Glen W. "Professional Competencies Needed by Extension Agents in Swaziland." Doctor of Philosophy Dissertation, The Pennsylvania State University, University Park.

FERRY, Earl. "Effects of a Unit of Instruction in Energy Conservation in Changing Young Farmer Energy Conservation Practices and Understandings." Staff Study, The Pennsylvania State University, University Park.

GINTHER, Byron H. "Development and Evaluation of an Agents Guide for Developing New 4-H Leaders Training." Master of Science Thesis, The Pennsylvania State University, University Park.

GOODALE, Douglas. "Cost-Effectiveness Analysis of Two-Year Post Secondary Curricula: A Case Study." Doctor of Philosophy Dissertation, The Pennsylvania State University, University Park.

GRAY, Johnny. "Turkey Hunters' Attitudes Toward Safety Clothing." Doctor of Philosophy Dissertation, The Pennsylvania State University, University Park.

HARRIS, Renee. "Development of a Manual of Serious Games for Leadership Development of Youth." Master of Education Paper, The Pennsylvania State University, University Park.

HEINSOHN, Anne and LINDLEY, William. "Evaluation of 4-H Club Experiences." Staff Study, The Pennsylvania State Univeristy, Univeristy Park.

HENRY, Arba L. "Evaluation of the Leadership and Programs of the Pennsylvania State Grange." Doctor of Education Thesis, The Pennsylvania State University, University Park.

LINDLEY, William and YODER, Edgar. "An Impact Evaluation of Selected Cooperative Extension Service and Vocational Education Youth Programs." Staff study, The Pennsylvania State University, University Park.

MCCOY, James S. "Evaluation of the College of Agriculture Curriculum." Doctor of Philosophy Dissertation, The Pennsylvania State University, University Park.

MILLER, Stephen. "Development of a Monthly Program Planning Handbook for Beginning Teachers." Master of Education Paper, The Pennsylvania State University, University Park.

MIZER, Jeff. "Development of an Approved Practices Manual for Vegetable Crops." Master of Agriculture Paper, The Pennsylvania State University, University Park.

MORTON, Raymond H. and YODER, Edgar P. "The Multiple-Criteria Approach for Cost Effectiveness Analysis of Vocational Education." Staff Study, The Pennsylvania State University, University Park.

MORTENSEN, James, STINSON, Richard and CURTIS, Samuel. "Competency Based Agricultural Education Programs in Secondary Schools." Staff Study, The Pennsylvania State University, University Park.

MYERS, Clyde A. B. "Skills Needed by Novice Pennsylvania Shephards and an Evaluation of Available Sheep Publications." Master of Education Paper, The Pennsylvania State University, University Park.

ONG'ONDO, Wycliffe N. "Professional Competencies Needed by Extension Agents in Kenya." Doctor of Philosophy Thesis, The Pennsylvania State University, University Park.

REDDING, Larry R. "Perceived Effectiveness of FFA Chapters by Personnel Outside of the Vocational Agriculture Profession." Master of Science Thesis, The Pennsylvania State University, University Park.

SHAEFFER, Cynthia. "Evaluation of Microcomputer Programs for Dairy Rations." Master of Science Thesis, The Pennsylvania State University, University Park.

SHARKEY, David. "Development and Validation of Task Sheets for Use in Teaching Garden Center and Nursery Skills." Master of Education Paper, The Pennsylvania State University, University Park.

SHORT, Elizabeth. "Evaluation of a Foliage Slide Series and Student Manual." Master of Science Thesis, The Pennsylvania State University, University Park.

SHOTWELL, Richard T. "Producers' Attitudes Toward Direct Marketing of Their Fruits and Vegetables in Centre County Pennsylvania." Master of Agriculture Paper, The Pennsylvania State University, University Park.

STEVENS, Keith F. "Evaluation of the Cooperative Extension Service Extension Minutes Program." Master of Education Thesis, The Pennsylvania State University, University Park.

TUCKER, Terry W. "Development of a Manual for Use by Adult Farmer Teachers to aid with Interpretation of Farm Business Analysis Reports." Master of Education Paper, The Pennsylvania State University, University Park.

WICKRAMASURIYA, Heshan. "Development of a Manual for the Training of Rural Development Leaders in Sri Lanka." Master of Education Paper, The Pennsylvania State University, University Park.

WILLIAMS, William. "Effectiveness of Teaching Methods and Instructional Materials in Hunter Education." Staff Study, The Pennsylvania State University, University Park.

WONGSAMUN, Chaicharn. "Analysis of Selected Factors Affecting the Success of Community 4-H Clubs in Pennsylvania." Doctor of Philosophy Dissertation, The Pennsylvania State University, University Park.

YODER, Edgar P. and MORTON, Raymond. "Cost Benefit/Effectiveness Evalaution of Vocational Agriculture Programs." Staff Study, The Pennsylvania State University, University Park.

ACTIVE STAFF RESEARCH AND DEVELOPMENT PROJECTS, 1981-1982

AES 2424	Cooperative Education in Agriculture
AES 2438	Effectiveness of Teaching Methods and Instructional Materials in Hunter Education
AES 2484	Status of Special Needs Students in Vocational Agriculture
AES 2547	Cost-Benefit/Cost-Effectiveness Evaluation of Vocational Agriculture Programs
AES 2564	Competency-Based Agricultural Education Programs in Agriculture
AES 2578	An Evaluation of the Impact of Selected Cooperative Extension Service Youth Programs and Vocational Student Organizations in Pennsylvania

Energy Conservation for Agriculture —— funded by Pennsylvania Farm Electrification Council

Evaluation of FFA National Dairy Contests —— funded by Interstate Milk Producers Cooperative

Development and Evaluation of Beginning Vocational Agriculture Teacher Time Management Plan —— funded by Pennsylvania Department of Education

Identification of Competencies Needed for Fruit Production —— funded by Pennsylvania Department of Education

Evaluation of Occupational Competence and Student Learning —— Pennsylvania Department of Education

Small Fruit or Vegetable Growers Guide for Educators of Vocational Horticulture —— funded by Pennsylvania Department of Education

Development of a Floral Merchandising Project Record Book —— funded by Pennsylvania Department of Education